

ASPECT IN FREE ADJUNCTS

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In recent years, semanticists working within a variety of analytic traditions have focused much attention on the so-called aspects in English--the perfect and the progressive; their investigations have turned up a number of very subtle insights into the nature of the aspects. Here, I shall argue that certain components of the meaning of the perfect and the progressive that have recently been assumed to be intrinsic to their semantics are in fact just conversational implicatures, present only in certain sorts of contexts. My arguments are based on evidence from the semantics of free adjuncts--non-finite predicative phrases which function as adverbial clauses, like the expressions underlined in (1) and (2);

- (1) Walking home, John found a dollar.
- (2) Having finished her lunch, Mary went back to work.

as I shall show, free adjuncts reveal certain semantic properties of the perfect and the progressive which for very specific reasons fail to stand out in some more usual contexts. This paper consists of two essentially independent sections, the first dealing with the perfect, the second, with the progressive.

In his recent monograph on the semantics of the English perfect, Robert McCoard (1978) discusses four major analyses of the perfect which appear recurrently--though in a variety of guises--throughout the literature on this subject. The only defensible analysis,¹ he argues, is what he calls the 'extended now' theory.

This theory is based on a distinction between two sorts of time-intervals. At a given time-interval t ,² those intervals which precede t and are separated from t are termed past intervals, as in Fig. 1. Those intervals which end at t , on the other hand, are called extended nows, as in Fig. 2.

Fig. 1. i is a past interval relative to t .

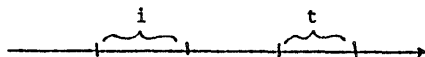
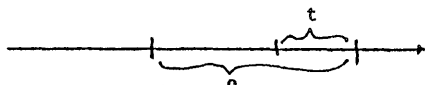


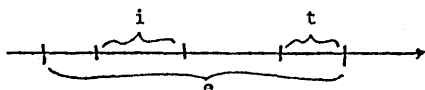
Fig. 2. e is an extended now relative to t .



The extended now theory holds that the function of the perfect is to locate an event within an extended now, while the function of the preterit is to locate an event at some past interval. According to this analysis, sentence (3) is true at interval t iff sentence (4) is true sometime during an extended now relative to t , as in Fig. 3.

- (3) John has seen Mary.
 (4) John sees Mary.

Fig. 3. (3) is true at t iff (4) is true at i .

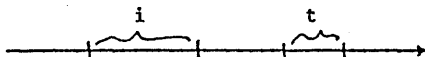


[e is an extended now relative to t ;
 e contains i .]

The preterit sentence (5), on the other hand, is true at interval t iff sentence (4) is true at some past interval relative to t , as in Fig. 4.

- (5) John saw Mary.

Fig. 4. (5) is true at t iff (4) is true at i .



[i is a past interval relative to t .]

In this theory, the perfect is rightly regarded, not as an

aspect, in the strict sense, but as a tense.³

The special merit of the extended now theory is that it affords a semantic account of which sorts of time adverbs may occur with the present perfect and which may not. While some time adverbs, such as today, may occur with either the present perfect or the preterit, others, such as yesterday, occur only with the preterit, and still others, like since noon, only with the present perfect, as examples (6)-(8) show.

- (6) John { has been } on the train today.
 { was }
 (7) John { *has been } on the train yesterday.
 { was }
 (8) John { has been } on the train since noon.
 { *was }

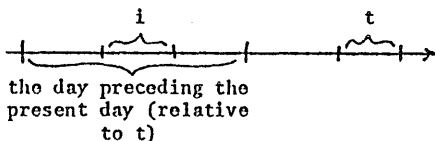
Let's make the uncontroversial assumption that time adverbs denote sets of time-intervals, so that the adverbs in (6)-(8) have the denotations spelled out in (9).

- (9) today denotes { i: i is a time-interval beginning and ending within the present day }
yesterday denotes { i: i is a time-interval beginning and ending within the day preceding the present day }
since noon denotes { i: i is an extended now beginning later than noon (on the present day) }

Now recall that we said that a preterit sentence is true at interval *t* iff the corresponding present tense sentence is true at some past interval relative to *t*--call this interval *j*. For the case of a preterit sentence modified by a time adverb, we now make the additional requirement that *j* be a member of the set denoted by the adverb. In this way, the truth of sentence (10) at interval *t* entails both that sentence (11) is true at some past interval relative to *t*, and, further, that this interval is in the denotation of the adverb yesterday, as in Fig. 5.

- (10) John was on the train yesterday.
 (11) John is on the train.

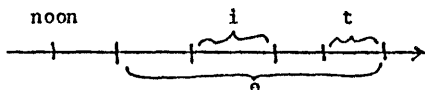
The case of the perfect is analogous. We said that a present

Fig. 5. (10) is true at t iff (11) is true at i .

[i is a past interval relative to t ; i is in the denotation of yesterday at t .]

perfect sentence is true at interval t iff the corresponding sentence in the simple present is true sometime during an extended now relative to t --let's call this extended now e . We now add the requirement that if the perfect sentence is modified by a time adverb, then e must be a member of the set denoted by the adverb. Thus, the truth of sentence (12) at interval t entails that there is an extended now relative to t which is in the denotation of the adverb since noon and during which sentence (11) is, at some time, true, as in Fig. 6.

(12) John has been on the train since noon.

Fig. 6. (12) is true at t iff (11) is true at i .

[e is an extended now relative to t ; e is in the denotation of since noon at t ; e contains i .]

If perfects and preterits are interpreted in this way, then the unacceptable sentences (13) and (14) will turn out to be contradictions--in both sentences, the tense and the time adverb will give rise to conflicting entailments.

(13) *John was on the train since noon.

(14) *John has been on the train yesterday.

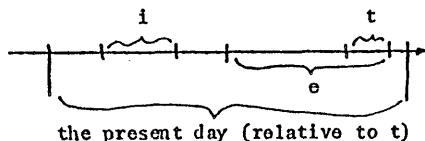
For (13) to be true at interval t , (11) would have to be true at some time-interval that is past relative to t and that is,

additionally, a member of the set denoted by since noon; but there can be no such interval, since every member of this set is an extended now relative to t . Likewise, if (14) were true at interval t , then (11) would have to be true sometime during an interval that is both an extended now relative to t and a member of the set denoted by the adverb yesterday; but this is impossible, since members of the latter set will always be separated from t . Note that sentences (15) and (16) are, on the other hand, both acceptable, because the denotation of the adverb today at interval t contains both past intervals, like i in Fig. 7, and extended nows, like e .

(15) John has been on the train today.

(16) John was on the train today.

Fig. 7. Two intervals in the denotation of today at t :



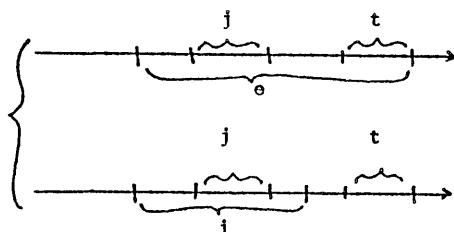
As these few examples suggest, the extended now theory of the perfect affords a subtle and intuitive account of how time adverbs join with tenses in English.⁴

What I shall argue in this section is that, contrary to the central claim of the extended now theory, the real function of the perfect is to locate an event either within an extended now or within a past interval. That is, I shall argue that the semantics of the perfect is such that sentence (3) is true at interval t in either of the situations represented in Fig. 8. This claim would appear to be immediately contradicted by the anomaly of sentences (13) and (14); but I shall argue that this is a pragmatic anomaly, not a semantic one, as the extended now theory implies.

Consider sentence (17).

(17) Having been on the train, John knows exactly why it derailed.

Fig. 8. (3) is true at t iff (4) is true at j .



[e is an extended now relative to t ; i is a past interval relative to t ; both e and i contain j .]

The free adjunct in this sentence is headed by the have of the perfect. The extended now theory predicts that adjuncts of this sort will contain time adverbs like since noon, but not those like yesterday, which, it is argued, are semantically incompatible with the perfect. Yet, as the acceptability of both (18) and (19) shows, perfect adjuncts may contain adverbs of either sort:

- (18) Having been on the train since noon, John knows exactly why it derailed.
 (19) Having been on the train yesterday, John knows exactly why it derailed.

There is, however, an intuitive difference between (18) and (19): if we paraphrase these with sentences (20) and (21), which have full adverbial clauses instead of free adjuncts, we find that while the perfect construction in sentence (19) functions essentially like a present perfect, that in (19) has the function of a preterit.

- (20) Because he $\left\{ \begin{smallmatrix} \text{has been} \\ * \text{was} \end{smallmatrix} \right\}$ on the train since noon, John knows exactly why it derailed.
 (21) Because he $\left\{ \begin{smallmatrix} * \text{has been} \\ \text{was} \end{smallmatrix} \right\}$ on the train yesterday, John knows exactly why it derailed.

The use of the perfect construction in a preterit role is in fact very widespread. It shows up in every nonfinite structure that admits the perfect; in the structures in (22), for example, the underlined phrases can function as present perfects or as preterits, depending on the accompanying adverb.

(22) Marked infinitive complements:

Bill seems to have slept { since noon.
yesterday.

Unmarked infinitive complements:

Mary may have played the piano { since noon.
yesterday.

Adverbial infinitives:

To have done the entire job { since noon }
yesterday },
John must have had help.

Gerunds:

In spite of having studied { since noon }
yesterday },
John isn't confident of passing.

His having been in New York { since noon } is
yesterday } hard to explain.

Participial absolutes:

His father having driven { since noon }, John
yesterday } wants to take the wheel.

'Reduced relative clauses':

Anyone having spoken with Anne { since noon }
yesterday } should contact the police.

Furthermore, the perfect construction may serve as a preterit in the past and future perfects. These compound tenses are normally analyzed as the preterit or future of a present perfect; and this analysis would appear to be correct in the case

of sentences like (23) and (24).

(23) John had worked on the problem since noon.

(24) John will have worked on the problem since noon.

But the acceptability of sentences like (25) and (26) compels us to admit that the past and future perfect constructions may express the preterit or future of a preterit;⁵ otherwise, sentences (25) and (26) would be fully as anomalous as (27).

(25) John had worked on the problem the day before.

(26) John will have worked on the problem the day before.

(27) *John has worked on the problem yesterday.

It appears, then, that the perfect construction can assume a preterit function in any nonfinite structure in which it may appear, as well as in the preterit and future tenses--in other words, everywhere but in the present tense. But it is just the present perfect that is actually in competition with the preterit--there is nothing comparable to the preterit with which the perfect may contrast in nonfinite constructions or in the preterit or future tenses. This is a critical fact in the analysis which I now propose for the perfect.

In my analysis, the preterit tense is assumed to locate an event at some past interval--exactly as in the extended now theory; the perfect, however, receives a much broader interpretation: a perfect sentence is true at interval *t* iff the corresponding simple present tense sentence is true sometime during an interval *j* which lasts no later than *t*; if the perfect sentence is modified by a time adverb, then *j* must be a member of its denotation. Because *j* may be a past interval or an extended now, my analysis predicts that perfects will occur acceptably both with adverbs like since noon and with those like yesterday; this prediction is borne out in the vast majority of cases, as we have seen--everywhere but in the present tense. The present perfect is distinguished because it directly competes with the preterit; this, I claim, is the source of the unacceptability of sentences like (14).

In his article 'Conversational Implicature and the Lexicon', McCawley (1978) argues that 'what is conversationally implicated by an utterance depends not only on the utterance

but on what other utterances the speaker could have produced but did not' (p.245); he discusses several cases 'in which an utterance conversationally implicates something by virtue of its "taking more effort" or "taking the speaker further out of his way" than some alternative utterance.'⁶ The case of the present perfect is analogous to the examples discussed by McCawley.

When we use a present perfect sentence like (3), we conversationally implicate that we had a reason for not using the corresponding preterit (5), namely that John's seeing Mary happened during some extended now which we find especially salient.

(3) John has seen Mary.

(5) John saw Mary.

This implicature in effect eliminates the overlap between the truthconditions of the perfect and those of the preterit, so that, for pragmatic reasons, the present perfect seems to have exactly the truthconditions ascribed to it by the extended now theory. Thus, sentence (28) is, in my analysis, pragmatically rather than semantically anomalous: the adverb yesterday unequivocally locates the event of John's seeing Mary at a past interval, so that there would normally be no motive for choosing the perfect over the preterit in this sentence (but see footnote 7).

(28) *John has seen Mary yesterday.

This analysis implies that the perfect is somehow more 'marked' or 'takes the speaker further out of his way' than the preterit. This seems to be true, whether one considers syntactic or semantic evidence. The perfect, a periphrastic rather than merely inflectional tense, is structurally more complex than the preterit. And semantically, the job of the perfect is to locate an event somewhere within a given interval, while the preterit just locates an event at some interval. The perfect is clearly the 'marked case' in both respects.⁷

In the extended now theory, the perfect is simply equated with the present perfect; yet, as we have seen, it is precisely the present perfect that, for pragmatic reasons, provides the least insight into the true nature of the perfect. As a con-

sequence, the extended now theory provides no account whatsoever⁸ of the use of the perfect in a preterit role in nonpresent tense constructions. My analysis, on the other hand, allows all perfects to be uniformly interpreted, whether they are present, past, future, or nonfinite; furthermore, it recognizes the pragmatically exceptional nature of the present perfect. These are its principal advantages.

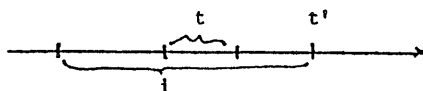
I now turn to an analogous argument regarding the semantics of the progressive.

It has recently been argued that an adequate truthconditional account of the progressive must incorporate both temporal and modal conditions.

The temporal dimension of the truthconditions has been assumed for several years now. In unpublished work dating from 1972, Michael Bennett and Barbara Partee argued that a progressive sentence is true at interval t ⁹ iff the corresponding nonprogressive sentence is true at some interval of time properly containing t (but not ending with t); according to their truthconditions, sentence (29) is true at some interval iff sentence (30) is true at some more encompassing interval, as in Fig. 9.

- (29) John is pushing a cart.
 (30) John pushes a cart.

Fig. 9. (29) is true at t iff (30) is true at i .



[i properly contains t ; t doesn't contain t' .]

David Dowty (1979: Ch.3) has recently argued that this temporal condition is by itself inadequate, owing to what he calls the 'imperfective paradox'. The paradox consists in the fact that progressives with accomplishment or achievement predicates, like those in (31), do not entail the corresponding nonprogressive sentences;¹⁰ for example, the truth of sentence (32) would not allow one to infer the truth of (33)--(32) could well be true even if someone caught the glass in midair.

(31) <u>Accomplishment</u> <u>predicates</u>	<u>Achievement</u> <u>predicates</u>
paint a picture	notice a picture
melt an icecube	melt
recite a poem	remember a poem
walk to K. C.	reach K. C.
read oneself to sleep	fall asleep
(Cf. Vendler (1967); Dowty (1979: Ch.2,3))	

(32) The glass was falling to the floor.

(33) The glass fell to the floor.

The consequence of this paradox is that we cannot regard the progressive simply as a temporal operator, according to which the actual truth of a progressive sentence at some interval depends upon the actual truth of the corresponding nonprogressive sentence at some surrounding time-interval. Instead, we must acknowledge a modal dimension in the truthconditions for the progressive. Consider sentence (34).

(34) The glass is falling to the floor.

(35) The glass falls to the floor.

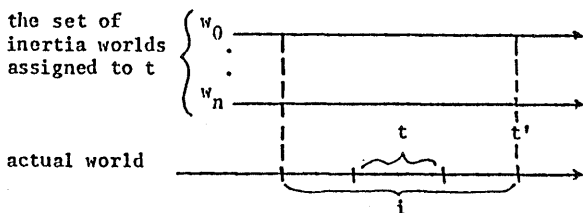
Intuitively, the truth of this sentence at some interval t implies that sentence (35) would be true at some interval properly containing t if nothing unanticipated were to impede the glass' fall subsequently to t --that is, if the 'natural course of events' were somehow allowed to flow inertly starting at t .

Dowty (1979:145-150) proposes truthconditions for the progressive which embody this intuition model-theoretically. Crucial to these truthconditions is a category of possible worlds which he calls inertia worlds. Given any interval of time i , a set of inertia worlds is assigned to i ; this set is to be thought of as containing exactly those worlds that are like the real world up to and including i , and 'in which the future course of events after this time develops in ways most compatible with the past course of events' (1979:148).¹¹ Employing this novel addition to model structure, Dowty offers truthconditions for the progressive which may be paraphrased as in (36).

- (36) A sentence p in the progressive is true at interval t iff there is some interval i which properly contains t (but which doesn't end with t) such that the nonprogressive sentence corresponding to p is true at i in every member of the set of inertia worlds assigned to t .
(Cf. Dowty (1979:149))

According to (36), sentence (34) is true at interval t iff (35) is true at some more encompassing interval in every inertia world assigned to t , as in Fig. 10.

Fig. 10. (34) is true at t (in the actual world) iff (35) is true at i in each of w_0, \dots, w_n .



[i properly contains t ; t doesn't contain t' .]

As you can see, this account of the progressive captures both its temporal and modal dimensions.

In this section, I shall argue that the progressive aspect in fact has no independent semantic status in English--that its truthconditions are entirely determined by general semantic properties of present participles and conversational implicatures.

A good construction to examine in order to find out about the semantics of present participles is the free adjunct construction: not only can the full range of present participial phrases occur as free adjuncts,¹² but other sorts of predicative phrases can as well; this allows us to determine exactly which parts of the meaning of a present participial adjunct derive from the participial phrase itself, and which are part of the constructional meaning of free adjuncts generally. Furthermore, it's clear that present participial adjuncts are not just degenerate progressives, since those stative predicates¹³ which

fail to occur in the progressive nevertheless do show up in adjuncts of this sort, as the examples in (37) show.

- (37) Being a sailor, John smokes a pipe.
 (Cf. *John is being a sailor.)
 Having barely enough money for bus fare, Mary decided to skip lunch.
 (Cf. *Mary was having barely enough money for bus fare.)
 Weighing five tons, our truck made the bridge shake.
 (Cf. *Our truck was weighing five tons.)

One conclusion which can be drawn on the evidence of free adjuncts is that imperfectiveness is not a property peculiar to the progressive. It doesn't necessarily follow from sentence (38) that John actually crossed the street, any more than it follows from sentence (39); (38), like (39), may be felt to imply only that John would have crossed the street if nothing unanticipated had happened.

- (38) Crossing the street, John was hit by a car.
 (39) John was crossing the street.

It's important to recognize that the imperfectiveness of the adjunct in (38) is a consequence of the fact that the adjunct consists of a present participial phrase. Free adjuncts of other kinds--those consisting of past participial phrases, adjective phrases, prepositional phrases, or predicative noun phrases--are never imperfective in this way,¹⁴ as the examples in (40)-(43) suggest.

- (40) Beaten, the team left the field.
 (41) Mary, asleep, didn't hear the noise.
 (42) In his new outfit, Bill looked ten years younger.
 (43) A dedicated boy scout, John showed us every knot in the book.

Present participial phrases, however, show this property in other sorts of constructions, including those exemplified in (44).

Notice, however, that although progressive sentences with accomplishment or achievement predicates are always felt to be

(44) Adnominal participles:

Mary found the dying man.

[doesn't entail that he died]

The man crossing the street was hit by a car.

[doesn't entail that he crossed the street]

'Temporally restrictive participles':¹⁵

John sat reciting the Iliad.

[doesn't entail that he recited the Iliad]

Jane found Rover running across a field.

[doesn't entail that he ran across the field]

Augmented adjuncts:¹⁶

While copying the sentence into his notebook,
he ran out of ink.

[doesn't entail that he copied the sentence
into his notebook]

imperfective, present participial adjuncts with such predicates are open to perfective as well as imperfective interpretations. For example, although we can never infer sentence (45) from sentence (39), we might well infer (45) from (46);

(45) John crossed the street.

(46) Crossing the street, John entered the building
opposite his office.

we might even draw this inference from sentence (38), if we made the rather unlikely assumption that the car that hit John was driving down the sidewalk on the opposite side of the street. Present participles in other constructions also seem to admit both perfective and imperfective interpretations: sentence (47), for instance, can be taken as either (48) or (49), and sentence (50), as either (51) or (52).¹⁷

(47) In the fourth inning, John bet on the winning
team.

(48) In the fourth inning, John bet on the team that
was winning.

(49) In the fourth inning, John bet on the team that
won.

- (50) Everyone climbing the mountain received a prize.
- (51) Everyone who was climbing the mountain received a prize.
- (52) Everyone who climbed the mountain received a prize.

Thus, while progressives appear always to be imperfective, present participial phrases in other sorts of constructions may or may not be. One way to account for this asymmetry is to postulate two sorts of present participial phrases in English--one perfective, the other imperfective--and to assume that both kinds may occur as free adjuncts or adnominal modifiers but that only the imperfective sort may occur as progressives. This solution would account for the facts, but only by sheer brute force.

I wish to propose a more interesting explanation, according to which present participial phrases are uniformly interpreted and the observed asymmetry follows from conversational principles. In my analysis, present participial phrases are semantically indeterminate as to their perfectiveness; any resolution of this indeterminacy is taken to be the result of the inferences of language users.

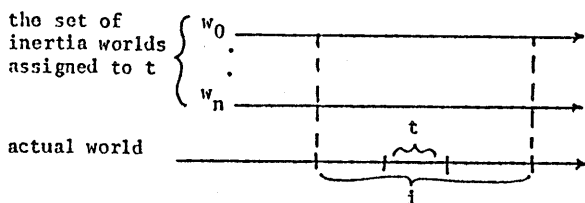
Let's suppose that simple verb phrases denote sets, so that, for example, the denotation of the verb phrase cross the street at some interval is exactly the set of individuals who cross the street at that interval. Then we can interpret a present participial phrase in terms of the corresponding verb phrase as in (53):

- (53) An individual x is in the denotation of a present participial phrase P at interval t iff there is some interval i which contains t [N.B.: possibly identical with t] and at which x is in the denotation of the simple verb phrase corresponding to P in every member of the set of inertia worlds assigned to t .

According to (53), John is in the denotation of the present participial phrase crossing the street at interval t iff there is some interval i at which sentence (54) is true in every inertia world assigned to t , as in Fig. 11. Now, (53) allows i either to properly contain t or to be identical with t :

(54) John crosses the street.

Fig. 11. John is in the denotation of crossing the street at t iff (54) is true at i in each of w_0, \dots, w_n .



[i contains t .]

when i properly contains t , the participial phrase will be understood imperfectively; but if i is identical with t , then the participial phrase will be perfective, since, as you will recall, the inertia worlds assigned to t are identical to the actual world at all times up to and including t . Thus, from a strictly semantic point of view, sentence (55) is not ambiguous between an interpretation in which John runs into Mary after crossing the street and one in which he encounters her while he's crossing it--rather, it's indeterminate between the two readings.

(55) Crossing the street, John runs into Mary.

Of course, the question of whether or not an event is completed is bound to be a very salient one in most conversational contexts. Accordingly, we might well infer that someone uttering sentence (55) intends the free adjunct to be construed as either perfective or imperfective; in some cases--sentences (38) and (46), for instance--it's almost impossible not to draw such an inference. The effect of these inferences is, as it were, to sharpen the relation between i and t in (53) to one of proper containment or one of identity.¹⁸

In my analysis, the progressive is simply a predicative construction, consisting of a semantically empty copula and a present participial phrase, interpreted exactly as in (53). But recall that, unlike other present participial constructions,

the progressive admits only imperfective interpretations with accomplishment and achievement predicates. This, I claim, is a simple consequence of the fact that the progressive tenses are in direct competition with the simple tenses. When we use a past progressive sentence like (32), we conversationally implicate that we have some reason for avoiding the corresponding preterit (33), which is both structurally and conceptually simpler than (32). If its participial phrase is construed perfectly, (32) is pragmatically equivalent to (33); accordingly, the use of (32) implicates that its participial phrase is to be understood imperfectively.

- (32) The glass was falling to the floor.
- (33) The glass fell to the floor.

Another difference between progressives and other sorts of present participial constructions can also be regarded as a consequence of the competition between the progressive tenses and the simple tenses. Recall that most stative predicates do not occur in the progressive, though they may occur as present participial phrases in free adjuncts, adnominal modifiers, and augmented adjuncts, as the examples in (56) and (57) suggest.

- (56) *He is owning a Porsche.
*He is weighing only 150 lbs.
- (57) Owning a Porsche, John often takes short trips
on the weekend.
Weighing only 150 lbs., Bill didn't make the
team.
Anyone owning a Porsche should be happy.
A man weighing only 150 lbs. defeated the champ.
Though owning a Porsche, he doesn't enjoy
driving much.
Though weighing only 150 lbs., he is quite
strong.

Dowty (1979: Ch.3) has shown that those statives that fail to occur in the progressive have a distinguishing semantic property: if they apply to an individual at some interval of time, then they apply to that individual at every moment throughout that interval. This means that a progressive sentence with a predicate of this sort would always be pragmatically equivalent to the corresponding nonprogressive sentence. Thus, at least one of the reasons for the failure of these statives to occur in

the progressive appears to be based on conversational principles of the sort discussed by McCawley: we would never have any reason for choosing a progressive tense over the corresponding simple tense in a sentence with one of these statives as its predicate.¹⁹ But because there is nothing comparable to the simple tenses with which present participial phrases may compete in the constructions exemplified in (57), the use of present participial statives poses no conversational anomalies in these constructions.

Drawing on the evidence of free adjuncts, I have presented two arguments regarding the semantic analysis of the so-called aspects in English. First, I have argued that the function of the perfect is to locate an event within a past interval or an extended now, and that the fact that the present perfect seems to place events only within extended nows can be explained in terms of conversational principles. Second, I have argued that the progressive is not a special semantic category of English, but that its truthconditions derive from those common to all present participial phrases; the fact that the progressive, unlike other sorts of present participial constructions, can only be understood imperfectively in the presence of an accomplishment or achievement predicate is shown, again, to follow from conversational principles.

NOTES

¹After reviewing a considerable body of evidence, McCoard concludes that the other three are inadequate either because they mistakenly equate the meaning of the perfect with some pragmatic implication associated with the perfect in certain contexts, or because they depend on an erroneous identification of the perfect with a complex configuration of simple tenses.

²See Dowty (1979:138) for arguments in favor of interpreting expressions with respect to intervals of time rather than moments. Moments, of course, can be regarded as one sort of interval.

³See McCoard (1978: Ch. 1) for arguments to this effect.

⁴For a much more detailed account along these lines, see

Dowty (1979:339ff).

⁵McCawley (1971) has pointed this out. McCoard (1978:152) acknowledges that 'the opposition [of the perfect] with the preterit exists only in tensed forms' and seems (p.179) to accept the notion that 'some embedded nontensed perfects are actually derived from preterits'. He appears not to have noticed that the perfect can serve as a preterit in the past and future perfect constructions, though he cites (p.184) one of McCawley's examples which shows this.

⁶For example, he points out that though we can say something is pale green, pale blue, or pale yellow, it's odd to say that something is pale red, owing to the availability of the adjective pink; consequently, when we do say that something is pale red, we conversationally implicate that pink for some reason does not apply--that we're talking about some color intermediate between red and pink, even though this may be much less pale than colors like pale green or pale blue.

⁷It might be objected that the unacceptability of (28) is simply too blatant to be pragmatic. But as little as we know about pragmatics, it would be foolish to prejudice our research with the assumption that pragmatic anomalies are inherently hazy. Furthermore, sentence (28) is acceptable in some contexts, as, for example, in (i):

- (i) So far, John has seen Mary yesterday, Bill has seen her this morning, ...

Here, the perfect is accompanied by two adverbs--yesterday and so far. So far, like since noon, denotes a set of extended nows; for this reason, it licenses the appearance of the perfect in this sentence. (Note that sentences like (i) are nevertheless explicit contradictions in the extended now theory.)

Perfect sentences involving two (or more) adverbs require slightly more complicated truthconditions than are assumed in the text: a perfect sentence *p* modified by a set *s* of adverbs is true at *t* iff the simple present tense sentence corresponding to *p* is true at some interval *i* such that the denotation of every member of *s* has a member which contains *i* and which lasts no later than *t*.

⁸Under the extended now theory, the perfect would apparently have to have two distinct sets of truthconditions, one for present perfects, the other for other sorts of perfects. This would not only be inellegant; it would in fact be incompatible with certain versions of the principle of compositional interpretation.

⁹Actually, they relativize the interpretation of progressive sentences to moments rather than intervals. See Dowty (1979:188, fn4) for an argument that progressives should be interpreted relative to intervals whose length is possibly greater than a moment.

¹⁰Progressive sentences with activity predicates (walk, sing, listen for something) pragmatically entail the corresponding simple present tense sentence. See Dowty (1979: Ch.3).

¹¹One might object to Dowty's analysis on the grounds that in some (maybe even most) situations it is very hard to decide what the natural course of events would be. But Dowty himself remarks (1979:149) that 'while there are severely subjective differences among individuals' beliefs as to how the world would "turn out" if left uninterfered with, agreement on the truth of progressive sentences, to the extent that such agreement obtains at all, presupposes that such beliefs are held in common.' 'Natural course of events' may be a vague notion, but the role it plays in the interpretation of imperfective progressives is quite clear.

Note that Dowty relativizes the interpretation of progressives to sets of inertia worlds. This is meant to capture the intuition that there may be several mutually exclusive natural courses of events--for example, at least two natural courses of events may ensue when a coin is flipped. Notice, however, that his truthconditions require that the simple present tense sentence corresponding to a progressive be true in every member of the relevant set of inertia worlds; see Dowty (1979:147f) for justification.

¹²A broader range of present participial phrases may appear as free adjuncts than may appear as 'reduced relative clauses' or temporally restrictive adjectives:

Being an experienced cook, John knows all about wine.

*Anyone being an experienced cook should know all about wine.

*I saw him being an experienced cook.

¹³These are what Dowty (1979:184) terms momentary predicates.

¹⁴As I have shown elsewhere (Stump (1980, forthcoming)), the logical role that a free adjunct plays in a sentence is by and large determined by inference: the absence of any explicit subordinating conjunction in sentences like (i) and (ii) forces us to fill in the relation joining the adjunct to its superordinate clause; this may be a relation of 'causation', as in (i), one of concession, as in (ii)--all sorts of relations are possible.

(i) Being a sailor, John knows all about boats.

(ii) Secretly preferring to go dancing, Mary gave in and went skydiving.

This being so, it would on the face of it seem quite reasonable to suppose that the felt imperfectiveness of the adjunct in (38) is in fact just a consequence of the sort of relation that is inferred to join it with its superordinate clause.

Despite the superficial appeal of this explanation, we must reject it. If users' inferences were responsible for the possibility of understanding the adjunct in sentence (iii) imperfectively, they would, in the same way, admit an imperfective interpretation for the adjunct in (iv); but such an interpretation is not found.

(iii) Losing, the Phillies left the field.

(iv) Beaten, the Phillies left the field.

¹⁵Dowty (1973) discusses adjectives of this sort.

¹⁶These are adverbs consisting of a subordinating conjunction and a predicative phrase (usually participial, adjectival, or preposition). See Stump (forthcoming: Ch.1).

¹⁷I do not wish to suggest that (48), (49), (51), and (52) represent the only possible readings for (47) and (50); other interpretations are clearly possible.

Oddly, temporally restrictive participles like those in (44) seem to resist a perfective interpretation. I suspect that this is the reflection of a semantic peculiarity common to all temporally restrictive adjectives. My hypothesis is that the truth of sentences like the third and fourth in (44) at some interval *i* entails that the underlined predicates are true of the referents of their 'controllers' at every moment throughout *i*. Since predicates that may appear in the progressive generally do not express properties that an individual might have at a single moment, this entailment of the temporally restrictive adjective construction would have the effect of forcing an imperfective interpretation for temporally restrictive participles.

¹⁸It might be objected that the difference between the perfective and the imperfective construal of a present participial phrase is a genuine ambiguity according to certain familiar tests; for example, in

John will give a prize to everyone climbing this mountain, and so will Jane,

it is virtually impossible to get a reading that is 'crossed' with respect to the perfectiveness of the adnominal participle (cf. Lakoff (1970)). But identity tests of this sort aren't a sufficient indicator of ambiguity. On the contrary, there are several semantically indeterminate constructions in which an inferred resolution of the indeterminacy remains constant under anaphora. For example, among the logical roles that can be inferred for the free adjunct in (i) are those of the adverbial clauses in (ii) and (iii) (in both cases, the participle is construed perfectly).

- (i) Driving home, John listened to the news on his car radio.
- (ii) After he drove home, John listened to the news on his car radio.
- (iii) While he drove home, John listened to the news on his car radio.

(i) is indeterminate between these (and other) readings; yet, they don't 'cross' under anaphora--if we understand (iv) to imply that what Mary claims is (ii), then it implies that Jane makes the same claim. For further discussion, see Stump (forth-

- (iv) Mary claims that driving home, John listened to the news on his car radio, and so does Jane.

coming).

¹⁹There are probably other reasons for the failure of most stative predicates to occur in the progressive--see Dowty (1979: 173ff). Nevertheless, see Taylor (1977:206) for an explanation based on conversational principles that is very much like that assumed here.

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